

Table I
Identification of Achievable Performance Standards
Source Category: Polymeric Foam Product Manufacturing

Regulated Component	Pollutant	Rule/Measure/Date							
		SCAQMD Rule 1175 Control of Emissions From The Manufacture of Polymeric Cellular (Foam) Products Adopted 11/3/89, Last amendment 5/13/94		SJUAPCD Rule 4682 Polystyrene Foam, Polyethylene, and Polypropylene Manufacturing Adopted 5/21/92, Last amendment 6/16/94		SDAPCD Rule 67.22 Expandable Polystyrene Foam Products Manufacturing Operations Adopted 6/7/94 Last amendment 5/15/96			
		Performance Standard							
The manufacturing steps of polymeric foam products. Not limited to expandable polystyrene (EPS), polystyrene foam extrusion, polyurethane, isocyanurate and phenolic foam operations.	VOCs, CFCs, or methylene chloride	X	All manufacturing operations (excluding EPS molding and rigid polyurethane operations) shall by January 1, 1994 discontinue its use of CFCs, VOCs, or methylene chloride. Any polymeric cellular manufacturing operations that fail to meet this requirement shall install an approved emission control system that vents all sources of manufacturing emissions to the approved emission control system. The emission collection system shall collect at least a 90 % by weight of the manufacturing emissions; & the control device shall reduce emissions from the	Operate controllable VOC sources by one of the following methods: 1. Exclusive use of a blowing agent other than VOCs or CFC 11 or CFC 12. 2. A collection system designed to achieve at least 90 percent VOC capture efficiency, and a thermal oxidizer which abates captured VOC emissions by at least 95 percent by weight; or 3. VOC emissions are controlled by a method which achieves an emission reduction equivalent to number 2. above and does not include the use of CFC-11 or CFC-12, &	A person shall not manufacture EPS foam products unless: 1. VOC emissions from such manufacture do not exceed 3.0 pounds per 100 pounds of EPS raw polymeric materials used; or 2. The raw polymeric materials used for such manufacture contain no more than 3.6 percent by weight of blowing agent, as indicated in product specifications from the manufacturer of the raw polymeric material. The Calculations of VOC emissions shall be determined by multiplying the quantity of EPS foam products produced by the difference between				

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		Performance Standard					
		emission collection system by at least 95 percent, by weight.	approved by the APCO.	the blowing agent content of the raw polymeric materials and that of the final EPS foam products, as determined after 24 hours of storage.			
		The owner or operator of an EPS molding operation shall submit a compliance plan that demonstrates, to the satisfaction of the Executive Officer, that manufacturing emissions and post- manufacturing emissions, assuming all the blowing agent is released from the product, are less than 2.4 lbs per 100 lbs of raw material processed. Failing to meet this requirement the owner					

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		Performance Standard					
		or operator shall install an approved emission control system.					
Emission control system for EPS foam manufacturing operations	VOCs in SD Rule 67.22 and SJ Rule 4682 VOCs, CFCs, or methylene chloride in SC Rule 1175	X EPS Molding operations: An approved emission control system that vents all sources of manufacturing emissions to the approved emission control system. The emission collection system shall collect at least a 90 percent by weight of the manufacturing emissions; and the control device shall reduce emissions from the emission collection system by at least 95 percent, by weight.	A collection system designed to achieve at least 90 percent VOC capture efficiency, and a thermal oxidizer which abates captured VOC emissions by at least 95 percent by weight; or VOC emissions are controlled by a method which achieves an emission reduction equivalent to the emission control system above and does not include the use of CFC-11 or CFC-12, & approved by the APCO.	Includes an emission collection system which captures manufacturing emissions, and transports the captured emissions to an air pollution control device; and has a combined emissions capture and control device efficiency such that VOC emissions from manufacturing operations do not exceed 3.0 pounds per 100 pounds of EPS raw polymeric materials used.			

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Compliance plan	VOCs, CFCs, and methylene chloride	X yes: Demonstrate compliance with the requirements of this rule for VOCs, CFCs, and methylene chloride.	yes: Demonstrate compliance with the requirements of this rule for VOCs only.	yes: Demonstrate compliance with the requirements of this rule for VOCs only.			

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		Performance Standard					
Storage of final products	SD: VOCS SCAQMD: VOCs, CFCs, and methylene chloride	X Emissions from the final manufactured product are vented only to the approved emission control system for at least: (I) 48 hours, in the case of expandable polystyrene molding operations that process more than 800,000 pounds per calendar year of raw material; or (II) 24 hours, in the case of all other manufacturing operations.	no storage requirement on finished product	24 hours from the time after the molding of pre-expanded materials to form the final EPS foam products.			

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		Performance Standard					
Recordkeeping		Any owner or operator subject to or granted an exemption by this rule shall maintain daily record of operations, including but not limited to the amount of raw material processed, the equipment used, and the type of blowing agent used. Such records shall be retained in the operator's files for a period of two years and be available to a District representative upon request.	Any person subject to the provisions of this rule, including exempt facilities, shall maintain records of operation, including but not limited to the amount of material processed, the equipment used, and the type of the blowing agent used. Records shall be maintained with a minimum monthly totals with the ability to calculate daily averages in any given month. Such records shall be retained for two years, and be made available upon request.	Maintain current records of manufacturer data for the blowing agent content of EPS raw materials used. Maintain monthly records of the amount of EPS raw materials used.			
recordkeeping (cont)		Owners and/or operators using an emission control system as a means of complying with this rule shall maintain daily records of the operation and maintenance of the emission control system.	Any person using an emissions control system as a means of complying with this	For control equipment, maintain daily records of the key system operating parameters, which will demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities. These records shall be retained on-site for at least three years and			

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		Performance Standard					
		These records shall include key system operating parameters such as temperatures, pressures, flowrates, and other measures to demonstrate compliance with the requirements of the approved emission control system, including the venting of the emissions resulting from storage of the final products.	rule, shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device. Key system operating parameters are those necessary to ensure compliance with VOC emission requirements such as temperature, pressures, and flowrates. Such records shall be retained for two years, and be made available upon request.	shall be made available to the District upon request.			
Test method for VOC content of materials	VOCs	X U.S. EPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60,	none	Product specifications from the manufacturer of the raw polymeric material.			

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		Performance Standard						
		Appendix A.); The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or, SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.						
Test Methods	exempt compounds	X USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of	EPA Method 18 or ARB Test Method 422 for determination of exempt compounds					

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			exempt compounds.		and halogenated blowing agents.				
Test method for determining the efficiency of emission control system	VOCs, CFCs, methylene chloride	X	The efficiency of the collection device shall be determined by the U.S. EPA method cited in 55 Federal Register 26865 (June 29, 1990), or any other method approved by the U.S. EPA, CARB, and the District. The efficiency of the control device and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as		The control efficiency of any air pollution control equipment shall be determined using EPA Methods 25 and 25A for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Method 18 or ARB Test Method 422 for determination of exempt compounds and halogenated blowing agents		Measurement of VOC emission control device efficiency shall be conducted using EPA Methods 18, 25, and/or 25A (40 CFR 60, Appendix A), as they exist on June 7, 1994. Test procedures shall be performed in accordance with a protocol approved by the APCO. Measurements of capture efficiency shall be conducted using test methods as provided above. Test procedures shall be performed in accordance with a protocol approved by the APCO. Subsequent		

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		Carbon) as applicable.		to the initial compliance demonstration period, appropriate key system operating parameters as determined by the APCO may be used as indicators of the performance of the emission collection system.			

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		Performance Standard								
Test method for determining weight percent of blowing agents in expandable styrene polymers	pentanes	X	SCAQMD Method 306 (Analysis of Pentanes in Expandable Styrene Polymers)				SCAQMD Method 306-9 (Analysis of Pentanes in Expandable Styrene Polymers)			
controllable manufacturing sources of emissions definitions	VOCs, &/or CFCs, &/or methylene chloride		Manufacturing Emissions are any emissions of VOC, CFC, or methylene chloride that occur during the manufacturing operation. Manufacturing Operation means every step of the processing of a polymeric material from the delivery of the raw material, until the storage of the final cellular product.		Controllable VOC Emission Sources: fluff silos or bins, reclaim extruders, condenser devolatizer vents, styrene recovery unit vents, and reclaim die hood exhausts in which materials manufactured with a VOC blowing agent are processed, or are stored, and from which emissions are vented to the atmosphere.		Manufacturing Emissions" means VOC emissions which occur during the manufacturing of EPS foam products, from the delivery of the raw polymeric materials to the manufacturing site to 24 hours after the molding of pre-expanded materials to form the final EPS foam products.			
VOC definition	VOCs		VOC is any volatile compound of carbon, excluding methane,		VOC means any volatile compound containing at least one		Defined in Rule 1020			

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		carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and exempt compounds	atom of carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, and exempt compounds which may be emitted to the atmosphere from EPS foam products manufacturing operations subject to this rule.				

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		Performance Standard									
Raw materials (polymeric materials) and blowing agents definitions	VOCs, resins, methylene chloride, CFCs, and polymerized polymers		<u>Raw material</u> : all polystyrene beads, polyurethane, and blowing agent used in the manufacture of polymeric cellular products.		<u>Polymeric material</u> : a multi-colored compound or mixture of compounds formed by polymerization and consisting essentially of repeating structural units.		not defined				
blowing agent definition	VOCs, CFCs, and methylene chloride		Blowing agent means a liquid, gaseous or solid material that facilitates the formation of a cellular product from raw polymeric material.		Blowing Agent: any liquid, or gaseous material, including VOCs, that facilitates the formation of a cellular product from raw polymeric material.		Blowing agent means a liquid or gaseous volatile organic compound that facilitates the formation of an EPS foam product from polymeric raw materials.				

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